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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,305

03/12/2004

Takahiro Kume

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02/11/2009

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EXAMINER

CHANG, VICTOR S

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

02/11/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/798,305	<b>Applicant(s)</b> KUME ET AL.	
	<b>Examiner</b> VICTOR S. CHANG	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 4-8, 10-20, 24 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9 and 21-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Introduction***

1. Applicants' amendments and remarks filed 2/4/2009 have been entered. Claim 1 has been amended. Claims 1-3, 9 and 21-23 are active.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn.

### ***Claim Rejections - 35 USC § 112***

4. Claims 1-3, 9 and 21-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

More particularly, claim 1 has been amended to recite

“... wherein ~~essentially~~ all of said foam cells formed in the polishing layer are interconnected by a network of continuous holes between said foam cells ...”

However, applicants fail to point out a clear support, nor can the examiner find a support in the specification, the amendment appears to be new matter. Applicants are required to provide a clear support in the next reply.

### ***Rejections Based on Prior Art***

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5. Claims 1-3, 9 and 21-23 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Prasad [US 6913517].

Prasad's invention relates to polishing pads for chemical-mechanical polishing. The polishing pad comprises porous foam having a uniform pore size distribution [col. 1, ll. 11-13]. The porous foam comprises open cells (holes connecting cells) [col. 5, ll. 21-24]. Fig. 3 is a scanning electron microscopy (SEM) image of a cross-section of a porous foam sheet. Fig. 15 is a SEM image of a solid thermoplastic polyurethane sheet at a greater magnification. Fig. 1 is a SEM image shows that the porous foam has a surface layer of smaller cell sizes. Fig. 8b shows a silica mapping image of a microporous foam polishing pad with the extent of penetration of the silica abrasive through the thickness after polishing 20 silicon dioxide blanket wafers (evidencing a network of continuous holes between foam cells). Fig. 7 shows the SEMs of the top surface of the porous foam sheets having a grooved macrotexture. The polishing pads can be produced using various techniques, including a phase inversion process [col. 10, ll. 32-35]. The phase inversion process involves the dispersion of a polymer resin in a non-solvent at elevated temperature. Upon cooling, the mixture forms a three-dimensional polymer network having sub-micron pore sizes [col. 11, ll. 40-52].

For claims 1-3, 9 and 21-23, the outer surface region of Prasad's polishing pads read on the "surface layer" of the claimed invention. Prasad's SEMs illustrate the various dimensional relationships between the components of the claimed invention. Regarding newly added product-by-process limitation "manufactured by a wet film forming process", since the process limitation has not been shown on the record to produce a patentably distinct article, the formed articles are rendered *prima facie* obvious, and this limitation at the present time has not been

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given patentable weight. Regarding the newly amended limitation “~~essentially~~ all of said foam cells formed in the polishing layer are interconnected by a network of continuous holes between said foam cells”, absent a clear support in the original specification, the amended limitation appears to be new matter as set forth above, and has not been considered. Further, even if this limitation is considered, Prasad teaches that the polishing pads can be produced using various techniques, including a phase inversion process, which reads on the forming process of the claimed invention. Absent any evidence to the contrary, a workable open celled network structure is deemed to be either anticipated, or obviously provided by practicing the same process of making for the same end product as the claimed invention.

### ***Response to Arguments***

6. Applicants argue at Remarks page 7

“The Prasad '517 patent neither discloses nor suggests the invention defined in amended claim 1, for two reasons. First, while claim 1 specifically recites that "all of said foam cells formed in the polishing layer are interconnected by a network of continuous holes between said foam cells," the foams formed in the Prasad ' 517 patent are predominantly closed cells. While the Prasad foam can contain open cells, Prasad expressly teaches that at least about "5% or more" of the cells should be closed cells”.

However, regarding the newly amended limitation “~~essentially~~ all of said foam cells formed in the polishing layer are interconnected by a network of continuous holes between said foam cells”, absent a clear support in the original specification, the amended limitation appears to be new matter as set forth above, and has not been considered. Further, even if this limitation is considered, Prasad teaches that the polishing pads can be produced using various techniques, including a phase inversion process, which reads on the forming process of the claimed invention. Absent any evidence to the contrary, a workable open celled network structure is

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deemed to be either anticipated, or obviously provided by practicing the same process of making for the same end product as the claimed invention. Furthermore, it should be noted that since Prasad merely teaches “*Preferably*, the porous foam comprises at least about 5% or more (e.g., at least about 10% or more) closed cells” [emphasis added], Prasad’s teaching about the amount of closed cell is interpreted as optional feature, not a necessarily required feature.

Applicants argue at page 7

“claim 1 recites that the polymeric foam sheet “includes a surface layer having foam cells...” By contrast, the polishing pad of Prasad '517 includes no foam-containing surface layer. In the pressurized gas injection process disclosed throughout the Prasad '517 patent (see column 11, lines 1-11), a crystalline skin may be formed as a result of the crystallizing of the polymer surface. However, such crystalline skin has no foam structure, as is specifically recited in claim 1. Contrary to the assertion of the Examiner in the last Office Action, none of the figures of the Prasad '517 patent or SEM images discloses the presence of foam cells in a surface layer.”

However, the outer surface region of Prasad’s polishing pads read on the “surface layer” of the claimed invention. Further, Prasad teaches that the polishing pads can be produced using various techniques, including a phase inversion process, which reads on the forming process of the claimed invention. Absent any evidence to the contrary, a workable “surface layer” is deemed to be either anticipated, or obviously provided by practicing the same process of making for the same end product as the claimed invention.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VICTOR S. CHANG whose telephone number is (571)272-1474. The examiner can normally be reached on 7:00 am - 5:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/  
Primary Examiner, Art Unit 1794